VIII. *Some Account of a Salt found on the Pic of* Teneriffe, *by* W. Heberden, *M. D. F. R. S.*

Read Feb. 7, 1764. IN the account of a journey up the Pic of Teneriffe, by Dr. Thomas Heberden, printed in the Philoſoph. Tranſactions, Vol. XLVII. N° 57. there is mention made of a ſort of ſalt, as well as of brimſtone, with which ſome parts of the Pic are covered. There is no difficulty in conceiving how brimſtone may be forced up by ſubterraneous fires; and it is no uncommon thing to find it in other places: but it is not ſo eaſy to underſtand how a ſalt of ſo fixed a nature, as this is, ſhould be ſublimed to ſuch a height without being cooled and fixed long before it arrives at the ſurface of the earth, where no ſenſible heat is perceived. Neither am I able to explain, how it happens, that a ſubſtance, ſo eaſily melted in water, is not diſſolved and waſhed away, as faſt as it can be produced, by the dews, and rains, and melted ſnow.

By means of my brother Dr. Thomas Heberden, I have procured a parcel of this ſalt collected from the Pic, a ſpecimen of which, together with ſome of the ſulphur, is here preſented to the Society; both which, though ſo very pure, are juſt as they were taken up. My brother informs me, that the ſalt is found not far from the verge of the crater, and that it is called, by the Spaniſh inhabitants of the

iſland, ſalitron; which is the name given by them to ſalt-petre; and that it is ſold for about five pence a pound.

It appears to be the natron or nitrum of the antients, or, as it is ſometimes called, the foſſil alkali, which is the baſis of ſea-ſalt: the ſame which is procured from the Spaniſh barilla, and from our own kelp.

The mineral alkali differs from the vegetable in its ready cryſtallizing without any addition of fixed air, which is neceſſary to make the latter take the form of cryſtals *; and in its not melting in a moiſt air; and on this laſt account it is a much more commodious ingredient in medicinal powders, than the vegetable alkali; as it is not like this apt to run per deliquium; but on the contrary, inſtead of attracting moiſture from the air, it is robbed by the air of its own moiſture, ſo that its cryſtals ſoon loſe their tranſparence, and are turned to powder. The natron liquefies in a very gentle heat: it reſembles the vegetable alkali in taſte and fixedneſs, and like that is uſed in making ſoap and glaſs; and they are both applicable to moſt of the ſame purpoſes.

Of the cryſtals of natron, when very dry, but yet with ſcarce any white powder on them, 100 grains may be diſſolved in 384 gr. of water, when Farhenheit's thermometer is at 37. Such cryſtals quite dry, and juſt inclining to grow white, will loſe $\frac{625}{1000}$ of their weight if dried, with a heat ſufficient to ſcorch paper.

* See Dr. Black's experiments in the Edinburgh Eſſays, Vol. II. page 218.

" The vegetable alkali has a ſtronger affinity to " the acid ſpirits of vitriol, nitre, and marine ſalt, " than the foſſil;" for

(1) If the common alkali be added to a ſaturated ſolution of Glauber's ſalt in water, the ſpirit of vitriol will leave the natron; and uniting itſelf with the vegetable fixed ſalt will form vitriolated tartar; which being of difficult ſolution, much of it will cryſtallize and fall to the bottom. while the natron, robbed of the vitriolic acid, remains diſſolved together with a ſmall portion of the vitriolated tartar.

(2) Gr. 166 of quadrangular nitre were diſſolved by heat in a ſolution containing gr. 138 of pearl-aſhes. On cooling, there ſhot ſome cryſtals of common nitre, the nitrous acid having left the foſſil alkali, which is the baſe of quadrangular nitre, to join itſelf with the pearl-aſhes.

(3) Gr. 500 of ſal-gem, which ſeemed quite free from ſal catharticus amarus, were diſſolved by heat in a ſolution of gr. 654 of pearl-aſhes. There ſhot a conſiderable quantity of ſal ſylvii mixed with foſſil alkali, which had been expelled by the pearl-aſhes from the marine acid.

Theſe experiments were made and communicated to me by the Hon. Henry Cavendiſh.

Beſides the properties, which have been mentioned, the natives of the Canary iſlands have found out, that they can make matches by dipping paper or tow in a ſtrong ſolution of natron, which will then burn, except that they do not ſparkle, almoſt as well as if they had been dipped in a ſolution of nitre, though upon trial no nitre appears to be mixed with it. The ſalt of barilla and kelp I find, by experience, to have

this property, but in a leſs degree, which may be owing to their not being perfectly free from other ſalts.

It may be doubted whether the mineral alkali be not generated upon the Pic, where it is found, by the fitneſs of that ſort of earth to attract out of the air ſome of the principles, of which it is made: for there is often ſeen upon walls a ſaline efflorescence, which proves to be this very ſalt; and ſome earth, as that at the bottom of a lake in Egypt, is ſaid to produce it, ſo as to make a conſtant ſupply of a great quantity, which is every year dug up and carried away. The natron muſt be in great abundance in the air or earth, as it is the baſe of that ſalt, which is the commoneſt of all in almoſt every part of the world; but though it be every where found, when united to the acid of ſea-ſalt, yet there are but very few places, where we have been able to procure it by itſelf.